

Metso:Outotec

Recycled aggregates

New life for construction waste



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Recycled aggregates

New life for construction waste

Tearing down an old building means new life for its materials. Renewing the road pavement means tons of reusable asphalt. The construction waste recycling professionals have an important job in making circular economy a reality.

Metso Outotec is a recycling specialist with decades worth of experience. The diverse materials and reinforcing iron set special demands for crushers and screens. Metso Outotec products are designed for easy purchase and reliable, profitable everyday operation.





Go where the money is — with mobile recycling equipment

The amount of construction waste is growing while the landfill costs are rising. Add the new legislation and the rising trend of circular economy, and you'll see growing business opportunities for demolishing and recycling professionals. With mobile recycling equipment, you can save on transport costs and go where the work is.

What are recycled aggregates?

The construction waste consists typically of concrete and iron as well as lighter materials such as wood and insulation. With proper equipment, the concrete waste can be separated from other materials and crushed to specific grade, making it a useful construction material known as recycled aggregates.

What are recycled aggregates good for?

Unprocessed crushed concrete and slag are particularly suitable for road construction, embankments, foundations and bulk fills. But once screened to clean fine and coarse aggregates, it lends itself to variety of uses such as making new concrete (typically 20% or more recycled material) in less demanding applications and good quality asphalt remix.

The benefits of recycling

Transporting and dumping construction waste is often problematic and costly. Crushing and screening on-site means less transport and dumping costs, and waste is converted into a valuable raw material. What's more, the separated metal can be sold as scrap iron. Particularly in urban construction, the efficient on-site recycling can be much more economical option.

Metso Outotec applications for aggregate recycling

Construction waste consists typically of concrete and brick, rebar, wood, plastic, gypsum and insulation materials. Iron has a high reuse value and it is easy to separate with the correct tools. Also lighter materials such as wood and plastic can be separated and recycled, while the concrete gets crushed and screened to specification.



Concrete recycling

Crushed concrete lends itself to many uses such as filling, road base and riprap. With Metso Outotec's mobile crushers and screens, concrete waste can be efficiently converted into quality recycled aggregates.



Asphalt recycling

Reusing fossil bitumen as well as aggregates in recycled asphalt makes sense financially and environmentally. The Metso Outotec line of mobile crushers and screens handle asphalt feed well, converting it to a valuable material that can be 10% to 100% of new pavement.



Soil recycling

Contaminated soil from construction must be screened to remove contaminants or other unusable particles. After processing it can be reused as landfill, reducing the need for virgin soil. Metso Outotec mobile screens boast an excellent capacity and reliability in a compact package. There are also applications for processing general waste.



Slag recycling

Byproduct of steel making process, processed slag is a valuable material in many different applications. It can replace 30–50% cement in concrete, used as aggregates, ballast and insulation material. Metso Outotec mobile crusher and screening plants lend themselves well to slag processing.

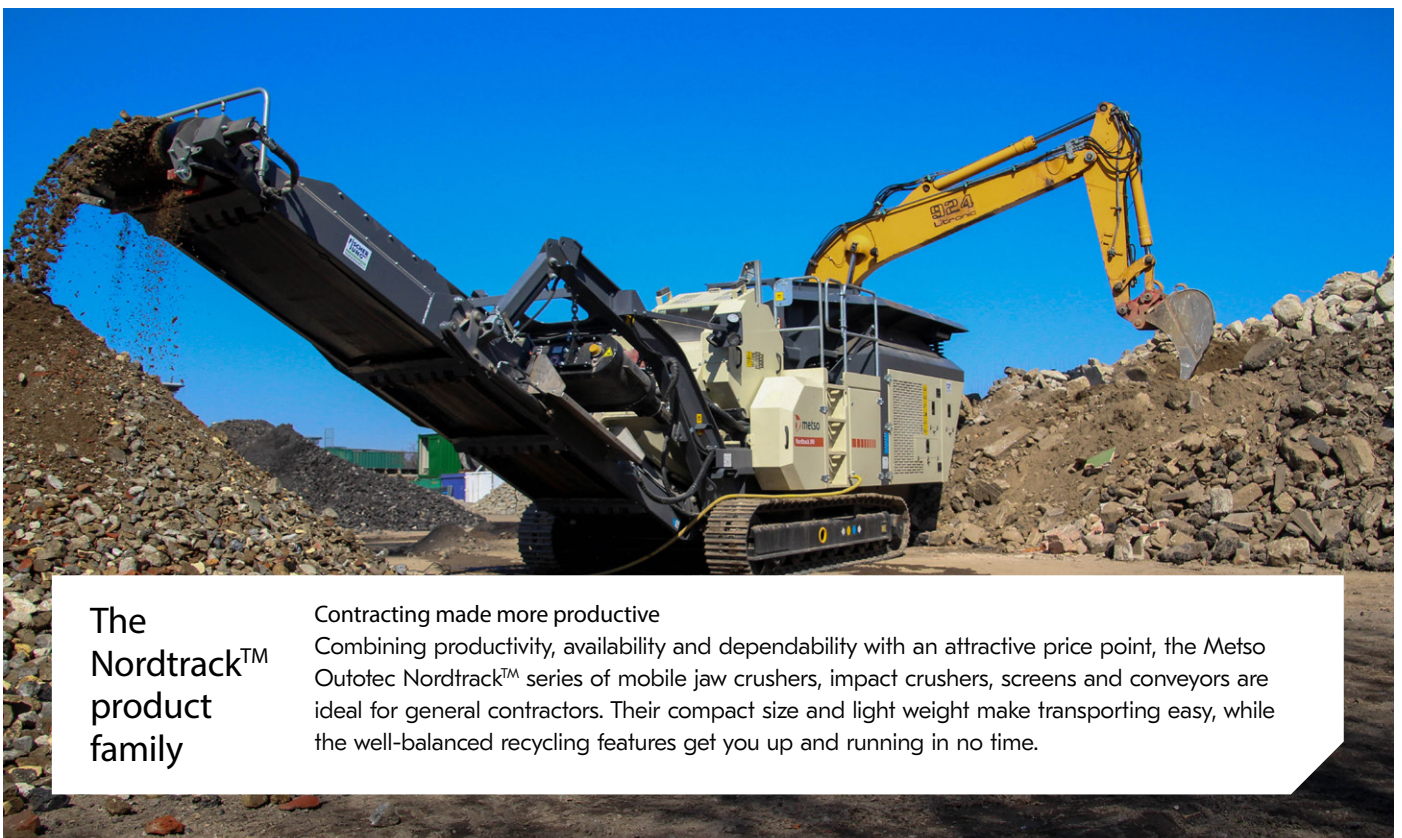
Lokotrack® or Nordtrack™ — two product families for efficient recycling



The Lokotrack® product family

The original trackmounted solution

The Metso Outotec Lokotrack® series features mobile jaw and impact crushers and screens — all with the legendary Lokotrack reliability, capacity, safety and simple maintenance. The Lokotrack crushers and screens are customized to your specific needs with a host of options to choose from and intelligent features to make your work more informed, automated and safe.



The Nordtrack™ product family

Contracting made more productive

Combining productivity, availability and dependability with an attractive price point, the Metso Outotec Nordtrack™ series of mobile jaw crushers, impact crushers, screens and conveyors are ideal for general contractors. Their compact size and light weight make transporting easy, while the well-balanced recycling features get you up and running in no time.

Features to get you into recycling

The efficient recycling work requires some features from your equipment. Here are some of the most important.



Pan feeder

Robust pan feeder under the crusher directs the material to the main conveyor preventing blockages and belt failures.

Windshifter

For separating light materials from the screened aggregates, the windshifter is an irreplaceable tool.

Water spraying system

High pressure water suppression system prevents dust from spreading, securing safe operation.

Magnetic separator

Liftable, remotely controlled magnet separates iron safely and without interruptions. For maximum performance, different magnet options are available. Stainless steel discharge chutes secure the material flow and prevent blockages.

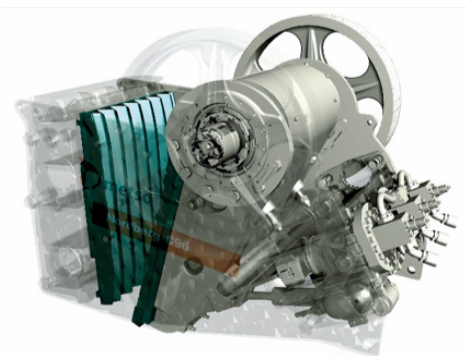
Screening media

Various durable screening media from grizzlies to punch plates and screen meshes guarantee efficient screening even in the most challenging applications.

Contact your local sales representative for further information and details.

Lokotrack® — the original trackmounted solution

Always tailored to your specific needs, Metso Outotec's Lokotrack® mobile crushers and screens meet your demands in robustness and high performance.



Safe crushing of uneven materials in recycling
Lokotrack® Jaw crushers

Powerful compression crushers suitable especially for concrete and slag crushing. Features such as reinforced conveyor belts and magnetic separator make them suitable for demanding demolition applications. With Active Setting Control™ (ASC) the crusher setting opens automatically in case of uncrushable material and returns back to original setting.



Features for quiet, noise-free recycling work
Lokotrack® Urban™ Series

Lokotrack® Urban™ Series mobile jaw crushers are noise and dust encapsulated crushing machines that comply with strict regulations and allow crushing and screening in cities, urban environments and other populated areas.



Efficient crushing and material separation
Lokotrack® Impact crushers

Proven impact crushers ideal for concrete and asphalt crushing. Options such as pan feeder under crusher, windshifter for light material separation or hydraulically adjustable magnet makes LT1213S ideal for high capacity demolition. Integrated dual slope screen enable stand-alone production of calibrated end products without compromises in transport. Direct drive ensure maximized crushing power with efficient fuel economy.



Efficient separation of different materials
Lokotrack® Mobile screens

Wide range of Lokotrack® mobile screens have user friendly IC control system ensuring seamless communication when used together with other Lokotracks. In stand-alone applications the multi-use machines such as ST2.8 have high stroke and wide range of screening media (eg. finger grizzly) providing excellent screening efficiency. Options such as magnetic separator and durable apron feeder make the units ideal for recycling and demolition.



Right product for the right material

	Concrete (Hard)	Concrete (Soft)	Asphalt	Slag	Soil
Lokotrack® Crushers					
LT96	●●●	●●	●	●●●	
LT106	●●●	●●	●	●●●	
LT1110/S	●	●●●	●●●	●●	
LT1213/S	●	●●●	●●●	●●	
Lokotrack® Screens					
ST2.3	●●●	●●●	●●●	●●●	●●●
ST2.8	●●●	●●●	●●●	●●●	●●●
ST3.8	●●●	●●●	●●●	●●●	●●●
ST4.8	●●	●●	●●	●●	●●
ST4.10	●●	●●	●●	●●	●●

●●● Ideal

●● Suits well

● Can be used with some limitations

Not applicable

Nordtrack™

— contracting made more productive

With well-balanced standard features and straightforward approach to the demands of the recycling work, the Nordtrack™ product family offers cost-effective productivity and reliability for recycling contractors.



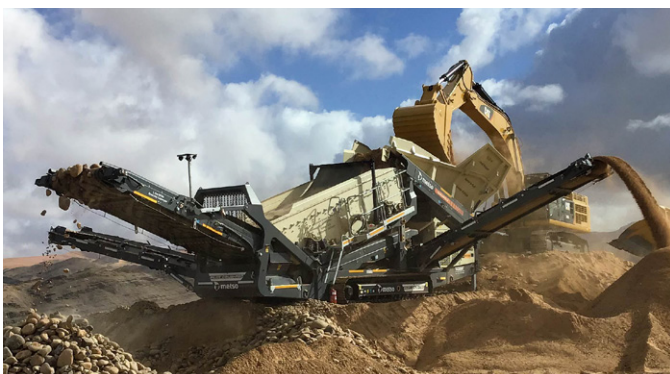
Reliable crushing for recycling needs
Nordtrack™ Jaw crushers

Nordtrack™ jaw crushers work best on tougher applications and are ideal for the short-term contract jobs where productivity matters. Different jaw liner options make it possible to identify and select the best configuration for each application.



Flexible crushing options for concrete and asphalt
Nordtrack™ Impact crushers

Nordtrack™ horizontal shaft impact crushers work most effectively on C&D waste and concrete recycling jobsites. The wide selection of different blowbars enables even tougher and more hard-wearing applications such as asphalt crushing. Nordtrack™ compact impact crushers are the best fit for smaller rental and contracting jobs as the units are easy and quick to take in to action from the transportation trailer.



Screening power for variety of applications
Nordtrack™ Multi use screen

Nordtrack™ scalper screens can work on versatile roles on the jobsite — from pre-scalping to more robust end product screening. With their broad offering of different screening media, they lend themselves to all purposes — from C&D waste recycling jobsites to top-soil screening.



For accurate separation of the end product
Nordtrack™ Finishing screens

Nordtrack™ end product screens are strong-build units for effective final product screening —whether it is aggregates, top soil or mulch, coal or C&D waste. The units are also designed to work well in a closed circuit with other Metso Outotec crushing equipment.



Right product for the right material

	Concrete (Hard)	Concrete (Soft)	Asphalt	Slag	Soil
Nordtrack™ Crushers					
I90	● ● ●	● ●	●	●	●
I127	● ● ●	● ●	●	●	●
I908	●	● ● ●	● ● ●	●	
I908S	●	● ● ●	● ● ●	●	
Nordtrack™ Screens					
S2.5	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●
S2.11	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●
S3.7	● ●	● ●	● ●	● ●	● ●
S4.7	● ●	● ●	● ●	● ●	● ●
S3.9	● ●	● ●	● ●	● ●	● ●
S4.9	● ●	● ●	● ●	● ●	● ●
S4.12	● ●	● ●	● ●	● ●	● ●

● ● ● Ideal

● ● Suits well

● Can be used with some limitations

Not applicable



“The jaw crusher plant is noise- and dust-free, and every company that recycles concrete should have one”

Mikko Mähönen, Purkumerkki Oy, Finland

Convincingly quiet and efficient

Just two working days with Lokotrack® Urban™ LT96™ were enough to convince Mikko Mähönen, Managing Director at Purkumerkki demolition and recycling contractor. The full noise encapsulation of the jaw crusher absorbed the crushing noise so effectively that the only sounds heard at the site were the hum of the diesel engines and the chink of the steel bars falling onto the pile.

“The combination of quiet operation, a capacity of more than 200 metric tons, the 17-liter consumption and a magnet that effectively removes concrete reinforcements makes this must-have equipment at all our recycling sites”, he says. “Bringing any demolition material to a landfill can easily cost 10–20 euros per metric ton, so recycling is the way to go.”



“We based our purchase decision on the machine’s ease of use and transportability, production rates, cost and, of course, the back-up service offered by the provider”

Hamish Wright, CCL Construction Contracting Ltd, New Zealand

Agile and compact mobile screen

Metso Outotec Lokotrack® ST2.3™ mobile screen is a perfect fit for Canterbury-based Construction Contracting Ltd (CCL) who will operate it at a subdivision project that requires the removal of 100,000m³ of rock over the next five years. The Lokotrack® ST2.3™ is an agile and compact mobile screen suitable for a wide range of applications from heavy duty scalping to fine screening and recycling. It brings the proven quality and operational reliability of Lokotrack® track-mounted solutions to a completely new lighter-weight screening solution.

“We are using the ST2.3 for a wide range of applications. This includes soil screening, pre-screening concrete rubble for crushing and making ballast, and drainage aggregates in conjunction with our impact crusher. Its compact size means the ST2.3 is easy to shift and has the ability to be used on small projects while still maintaining the productivity of much larger machines.”



“Quality is what enables us to guarantee our end customers the efficient and diverse reuse of recycled materials”

Mika Hiironen, Kivikolmio Oy, Finland

Transportable quality crushing

Finland's largest recycling crushing company focuses on prime-quality asphalt and demolition waste processing. Based on their previous positive experiences they went for Lokotrack® LT1213S™ mobile impact crusher with screen, which gives them a capacity of 170 tons/hour. The quality of the output is monitored constantly, and LT1213S has delivered great results.

“Despite including a screen, the LT1213S is easy to transport without having to be dismantled. The feed hopper extensions and side conveyors fold hydraulically, which makes it faster to prepare for transport. We save at least one flatbed-load per transport.”



“This machine is compact with good throughput, just what we needed with tight urban spaces”

Michael and Kevin Born, Bagger Born GmbH, Germany

Crushing in tight spaces

Bagger Born GmbH was looking for a mobile crusher that would be easy to operate in tight urban spaces in demolition waste recycling projects. The projects of crushing demolished concrete on building construction sites last only short period of time, so the machine needed also to be easy to transport frequently from site to site. Our distributor Fischer-Jung provided them the Nordtrack™ I908S mobile impact crusher with a hanging screen that fits their needs perfectly – with good throughput, compact size and easy transport.

“The I908S is exactly the right unit for any demolition recycling contract in urban areas. When we select the correct hammers for each contract job we can get good throughput and quickest finishing time.”

Technical data

Lokotrack® Range

	Type	Crusher intake	Transport weight	Diesel power ¹	Capacity class ²
Crushers					
LT96	Jaw	930 x 600mm (37" x 24")	29.0 t (64 000 lbs)	168 kW (225 hp)	300
LT106	Jaw	1,060 x 700 mm (42" x 28")	40.0 t (88 000 lbs)	224 kW (300 hp)	400
LT116	Jaw	1,150 x 760 mm (45" x 30")	50.0 t (110 000 lbs)	310 kW (415 hp)	450
LT1110/S	Impactor	1,040 x 800 mm (41" x 31")	32.0/38.0 t (71 000 / 84 000 lbs)	224 kW (300 hp)	300
LT1213/S	Impactor	1,320 x 900 mm (52" x 35")	42.0/51.0 t (93 000 /112 000 lbs)	310 kW (415 hp)	400

	Type	Screen size	Transport weight	Diesel power ¹	Capacity class ²
Screens					
ST2.3	Multi-use screen	3,000 x 1,520 mm (10' x 5')	17.0 t (37 500 lbs)	55 kW (74 hp)	350
ST2.8	Multi-use screen	4,870 x 1,524 mm (16' x 5')	26.0 t (57 000 lbs)	100 kW (134 hp)	600
ST3.8	Fine screen, 2 decks	5,480 x 1,524 mm (18' x 5')	28.0 t (62 000 lbs)	100 kW (134 hp)	500
ST4.8	Fine screen, 3 decks	5,480 x 1,524 mm (18' x 5')	32.0 t (71 000 lbs)	100 kW (134 hp)	500
ST4.10	Fine screen, 3 decks	6,000 x 1,520 mm (20' x 5')	33.5 t (74 500 lbs)	100 kW (134 hp)	600

1) Engine power may vary depending Tier 3/Stage V.

2) Depending on application and CSS

Nordtrack™ Range

	Type	Crusher intake	Transport weight	Diesel power	Capacity class ²
Crushers					
J90	Jaw	890 x 500 mm (35" x 20")	23.9 t (52 600 lbs)	162 kW (218 hp)	200
J127	Jaw	1,270 x 735 mm (50" x 29")	56.5 t (124 600 lbs)	261 kW (350 hp)	500
I908	Impactor	860 x 650 mm (34" x 26")	23.0 t (52 000 lbs)	188 kW (252 hp)	200
I908S	Impactor	860 x 650 mm (34" x 26")	27.5 t (60 700 lbs)	188 kW (252 hp)	200

	Type	Screen size	Transport weight	Diesel power	Capacity class ²
Screens					
S2.5	Multi-use screen	3,660 x 1,370 mm (12' x 4' 6")	23.0 t (50 700 lbs)	97 kW (129 hp)	450
S2.11	Multi-use screen	6,100 x 1,800 mm (20' x 6')	37.2 t (82 000 lbs)	165 kW (225 hp)	800
S3.7	Fine screen, 2 decks	4,270 x 1,524 mm (14' x 5')	28.0 t (61 750 lbs)	97 kW (129 hp)	450
S4.7	Fine screen, 3 decks	4,270 x 1,524 mm (14' x 5')	32.0 t (70 600 lbs)	97 kW (129 hp)	450
S3.9	Fine screen, 2 decks	6,100 x 1,524 mm (20' x 5')	36.4 t (80 300 lbs)	97 kW (129 hp)	600
S4.9	Fine screen, 3 decks	6,100 x 1,524 mm (20' x 5')	38.8 t (85 500 lbs)	97 kW (129 hp)	600
S4.12	Fine screen, 3 decks	6,710 x 1,830 mm (22' x 6')	42.4 t (93 600 lbs)	165 kW (225 hp)	800

[illegible]